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EXAMINER

STIGLIC, RYAN M

ART UNIT PAPER NUMBER

2112

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary

Application No.

09/831,041

Applicant(s)

SWART, MARTEN

Examiner

Ryan M. Stiglic

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-8 and 10-16 are pending and have been examined.
2. Claims 1-8 and 10-16 are rejected.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on November 4, 1998. It is noted, however, that applicant has not filed a certified copy of the foreign application number DE 198 50 869.7 as required by 35 U.S.C. 119(b).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(o) because they lack descriptive legends the Examiner feels are necessary for better understanding of the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 11-15 been renumbered 12-16.

6. Applicant is advised that should claim 11 be found allowable, claim 13 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 is improperly dependant on canceled claim 9.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim 1-2, 4, and 10-13 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Ying et al. (US006147967A).

For claim 1:

A line coupling in a bus system, the system having an input line and an output line, comprising:

- a master station connected to the line coupling via the input line (Fig. 6, 603; Fig. 7, 703);
- a first slave station connected to the line coupling via the output line (Fig. 6, 651; Fig. 7, 705);
- an isolation resistor coupled between the input line and the output line (Fig. 6, 643; Fig. 7, 711);
- a controllable switch connected in parallel with the isolation resistor (Fig. 6, 644; Fig. 7, 712); and
- a control circuit controlling the switch (Fig. 6, CPU 612 with control line 636; Fig. 7, control line 713) on the basis of an output voltage on the output line (col. 13, line 67 – col. 14, line 21).

For claim 2:

The line coupling as claimed in claim 1, further comprising an evaluator evaluating a control word supplied via the input line, and in which the control circuit is designed to control the switch on the basis of an ascertained control word.

Ying disclose the master node (Fig. 6, 603; Fig. 7-8, 703) issuing a CLOSE_RELAY control word via the input line (clockwise; sent by the downlink transceiver Fig. 6, 603) to a slave node (Fig. 7-8, 705) (col. 16, ll. 28-29). In response to receiving the CLOSE_RELAY an implied evaluator closes its relay/switch (col. 16, ll. 51-54). The evaluator is inherently present because some type of command decoding/evaluating has to be performed since the slave node performs a relay closing operation on the receipt of said CLOSE_RELAY.

For claim 4:

The line coupling as claimed in claim 1, further comprising an evaluator evaluating a control word supplied via the output line, and in which the control circuit is designed to control the switch on the basis of an ascertained control word.

Ying disclose the master node (Fig. 6, 603; Fig. 7-8, 703) issuing a CLOSE_RELAY control word via the input line (counter-clockwise; sent by the downlink transceiver Fig. 6, 603) to a slave node (Fig. 7-8, 705) (col. 16, ll. 28-29; col. 17, ll. 30-31 disclose the procedure for the input line above but in the opposite direction of the loop. Therefore instead of a slave, say Fig. 8, 705f). In response to receiving the CLOSE_RELAY an implied evaluator closes its

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relay/switch (col. 16, ll. 51-54). The evaluator is inherently present because some type of command decoding/evaluating has to be performed since the slave node performs a relay closing operation on the receipt of said CLOSE_RELAY.

For claim 10:

The line coupling as claimed in claim 1, wherein the output line is the input line for another line coupling and the output line of the another line coupling is connected to a second slave station (Fig. 7 & 8).

For claim 11:

The line coupling as claimed in claim 10, wherein the output line of a last line coupling is connected to the master station (1) (Fig. 8, 705f or 705a).

For claim 12:

As previously stated claim 12 is rejected for being dependant upon a canceled claim, however in an effort to advance prosecution the Examiner now understands claim 9 to depend from independent claim 1.

The line coupling as claimed in claim 9, wherein additional line couplings are connected in series with one another, and a third slave station is arranged between two data coupling stations (Fig. 7 & 8).

For claim 13:

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The line coupling as claimed in claim 10, wherein the output line of a last line coupling is connected to the master station (Fig. 8, 705f or 705a).

11. Claim 1,3, 5, 10-13 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lawton (US 4209666).

For claim 1:

A line coupling in a bus system, the system having an input line and an output line, comprising:

- a master station connected to the line coupling via the input line (Fig. 2, 11);
- a first slave station connected to the line coupling via the output line (Fig. 2, "RT");
- an isolation resistor coupled between the input line and the output line (Fig. 2, 28);
- a controllable switch connected in parallel with the isolation resistor (Fig. 2, 26); and
- a control circuit controlling the switch (Fig. 3, 35) on the basis of an output voltage on the output line (col. 4, ll. 1- 34).

For claim 3:

The line coupling as claimed in claim 1, in which a voltage tap (Fig. 3, 31) is provided on the input line, and in which the control circuit is designed to control the switch on the basis of an ascertained input voltage (col. 4, ll. 1-34).

For claim 5:

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The line coupling as claimed in claim 1, in and in which the control circuit is designed such that the controllable switch is turned on when the output voltage exceeds a limit value (output line is sensed by "LINE RECR." 32; col. 4, ll. 1-34).

For claim 10:

The line coupling as claimed in claim 1, wherein the output line is the input line for another line coupling and the output line of the another line coupling is connected to a second slave station (Fig. 2).

For claim 11:

The line coupling as claimed in claim 10, wherein the output line of a last line coupling is connected to the master station (1) (Fig. 2, "RTN").

For claim 12:

As previously stated claim 12 is rejected for being dependant upon a canceled claim, however in an effort to advance prosecution the Examiner now understands claim 9 to depend from independent claim 1.

The line coupling as claimed in claim 9, wherein additional line couplings are connected in series with one another, and a third slave station is arranged between two data coupling stations (Fig. 2).

For claim 13:

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The line coupling as claimed in claim 10, wherein the output line of a last line coupling is connected to the master station (Fig. 2, "RTN").

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6-8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ying et al. (US006147967A) as applied to claims 2-4 above, and further in view of Lawton (US 4209666).

Ying teaches a fault isolation and recovery system that comprises a master station connected to the line coupling via the input line (Fig. 6, 603; Fig. 7, 703), a first slave station connected to the line coupling via the output line (Fig. 6, 651; Fig. 7, 705), an isolation resistor coupled between the input line and the output line (Fig. 6, 643; Fig. 7, 711), a controllable switch connected in parallel with the isolation resistor (Fig. 6, 644; Fig. 7, 712), and a control circuit controlling the switch (Fig. 6, CPU 612 with control line 636; Fig. 7, control line 713) on the basis of an output voltage on the output line (col. 13, line 67 – col. 14, line 21). Ying detects the presence of bus faults through the use of commands (and replies) such as CLOSE_RELAY, which provide slave stations a prescribed control word to close the switch. Thus, upon issuance of the CLOSE_RELAY command a fault situation between the master and the recipient of

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CLOSE_RELAY command has been proven not to exist. Ying however, fails to teach the discovery of faults through the use of voltages on the input and output lines of the bus system.

Lawton teaches a fault isolation and identification system comprising a master station connected to the line coupling via the input line (Fig. 2, 11), a first slave station connected to the line coupling via the output line (Fig. 2, "RT"), an isolation resistor coupled between the input line and the output line (Fig. 2, 28), a controllable switch connected in parallel with the isolation resistor (Fig. 2, 26), and a control circuit controlling the switch (Fig. 3, 35) on the basis of an output voltage on the output line (col. 4, ll. 1- 34). Lawton also teaches the controllable switch is operated in accordance with voltages which exceed a limit on both the input and output lines (col. 4, ll. 1-34).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to implement the fault detection and location using input and output lines of Lawton with fault isolation and recovery system of Ying such that faults are readily located while maintaining full signaling capacity.

For claim 6:

The line coupling as claimed in claim 2, in which the control circuit is designed such that the controllable switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34) and a prescribed control word is detected (Ying; col. 13, line 67 – col. 14, line 21).

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For claim 7:

The line coupling as claimed in claim 3, in which the control circuit is desired such that the switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34 "LINE RECR 32" closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open), a prescribed control word is detected (Ying; col. 13, line 67 – col. 14, line 21) and the input voltage exceeds a limit value (Lawton; col. 4, ll. 1-34 "LINE RECR 31" closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open).

For claim 8:

The line coupling as claimed in claim 4, in which the control circuit is designed such that the switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34 "LINE RECR 32" closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open), a prescribed control word is detected at the input or at the output (Ying; col. 13, line 67 – col. 14, line 21 as discussed above, the CLOSE_RELAY command is sent both clockwise and counter-clockwise around the bus therefore the prescribed control word would be detected at the input or output depending on the direction the command was sent) and the input voltage exceeds a limit value (Lawton; col. 4, ll. 1-34 "LINE RECR 31" closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open).

For claim 14:

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The line coupling as claimed in claim 3, in which the control circuit is designed such that the controllable switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34) and a prescribed control word is detected (Ying; col. 13, line 67 – col. 14, line 21).

For claim 15:

The line coupling as claimed in claim 4, in which the control circuit is designed such that the controllable switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34) and a prescribed control word is detected (Ying; col. 13, line 67 – col. 14, line 21).

For claim 16:

The line coupling as claimed in claim 4, in which the control circuit is desired such that the switch is turned on when the output voltage exceeds a limit value (Lawton; col. 4, ll. 1-34 “LINE RECR 32” closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open), a prescribed control word is detected (Ying; col. 13, line 67 – col. 14, line 21) and the input voltage exceeds a further limit value (Lawton; col. 4, ll. 1-34 “LINE RECR 31” closes/turns on the switch only when a voltage is present (exceeding 0 volts), otherwise the switch is open).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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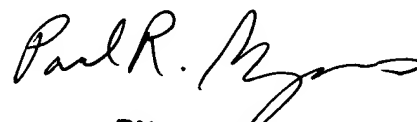
- Schneider (US005919253A), Rutigliano (US005886431A), and Nitschke (US006397280B1) disclose a shunt circuits for use in bus isolation

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan M. Stiglic whose telephone number is 571.272.3641. The examiner can normally be reached on Monday - Friday (6:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571.272.3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMS


PAUL R. MYERS
PRIMARY EXAMINER